

Appendix A

16. A method for identifying compounds that modulate antibiotic resistance in a microbe comprising:

contacting a BLR polypeptide with a test compound;
determining the ability of the test compound to modulate the activity or expression of a BLR polypeptide; and
selecting those compounds that modulate the activity of the BLR polypeptide to thereby identify compounds that modulate antibiotic resistance.

17. The method of claim 16, wherein the BLR polypeptide is present in a microbial cell.

18. The method of claim 16, wherein the BLR polypeptide is heterologous to the cell in which it is present.

19. The method of claim 17, wherein the microbial cell is an E. coli cell.

20. The method of claim 17, wherein said step of determining comprises measuring the effect of the test compound on the ability of the microbial cell to grow in the presence of an antibiotic.

21. The method of claim 20, wherein the antibiotic is an antibiotic that affects peptidoglycan synthesis selected from the group consisting of a beta lactam, cycloserine, and bacitracin.

22. The method of claim 21, wherein said step of determining comprises measuring the efflux of the test compound or a marker compound from the cell.

23. The method of claim 16, wherein the BLR polypeptide is contacted with the test compound in vitro.

24. A method for identifying compounds that modulate antibiotic resistance in a microbe comprising:

contacting an isolated BLR nucleic acid molecule with a test compound;

determining the ability of the test compound to bind to the isolated BLR nucleic acid molecule; and

selecting those compounds that bind to the BLR nucleic acid molecule to thereby identify compounds that modulate antibiotic resistance.

25. The method of claim 24, wherein the BLR nucleic acid molecule comprises the nucleotide sequence shown in SEQ ID NO:1.

27. A method for identifying a compound that modulates antibiotic resistance, comprising:

contacting at least one of a BLR nucleotide sequence and a BLR binding polypeptide with a test compound under conditions which allow interaction of the compound with at least one of the BLR nucleotide sequence and the BLR binding polypeptide; and measuring the ability of the compound to modulate the interaction of the BLR nucleotide sequence with the BLR binding polypeptide to thereby identify a compound that modulates antibiotic resistance.

28. A method for identifying a compound that modulates antibiotic resistance, comprising:

contacting at least one of a BLR polypeptide and a BLR binding polypeptide with a test compound under conditions which allow interaction of the compound with at least one of the BLR polypeptide and the BLR binding polypeptide; and measuring the ability of the compound to modulate the interaction of the BLR polypeptide with the BLR binding polypeptide to thereby identify a compound that modulates antibiotic resistance.